

REMARKS

Upon entry of the foregoing amendments, claims 19-58 are pending in the application. Claim 19 has been rewritten to include a temperature range of about 120 to about 185°C. Support this change may be found generally in the examples and, specifically, in examples 9-23 (Table 3, page 24) and on page 27, lines 17-20, of the application. The amendment to claim 19 does not present any new matter and is submitted to place the application in better form for consideration on appeal. Applicants attach hereto a version of the claims showing changes made by the current amendment. Further, to be fully responsive to the Office Action, Applicants file herewith a Notice of Appeal to the Board of Patent Appeals and Interferences.

Rejection of Claims 19-58 under 35 U.S.C. §103(a)

Claims 19-58 stand rejected under 35 U.S.C. §103(a) in view of the disclosure of Reichstein, U.S. Patent No. 2,265,121 ("Reichstein") in view of Hinkley et al., U.S. Patent No. 3,721,663 ("Hinkley"). Applicants respectfully traverse the rejection and the statements made in support thereof.

Applicants herein incorporate by reference their previous arguments regarding the deficiencies of the disclosures of Reichstein and Hinkley and, further, respectively maintain Hinkley, either alone or in combination with Reichstein, would not have taught, suggested, or motivated one of ordinary skill in the art make the present invention as defined by the current amendment. Specifically, neither Reichstein nor Hinkley would have motivated a person of ordinary skill in the art to produce ascorbic acid by heating an aqueous solution of a 2-keto-L-gulonic acid or a derivative of 2-keto-L-gulonic acid in the presence of a sulfite species at a temperature of about 120°C to about 185°C. Hinkley explicitly points out that the conversion to ascorbic acid can be carried out autocatalytically simply by heating the starting materials at elevated temperatures under pressure. The use of acid catalysts such as, for example, SO₂ or HCl, is recited as an alternative process to be carried out at lower temperatures, i.e., 20-100°C (Hinkley, col. 3, lines 37-63). There is no mention of using SO₂ or any sulfite species at elevated temperatures of 120°C to 185°C. Based on the disclosure of Hinkley, it would be entirely

reasonable for a skilled person to conclude that using any catalyst, including SO₂, in an ascorbic acid process at elevated temperatures was unnecessary. Thus, Hinkley would have provided no motivation or suggestion to use SO₂ or any sulfite species in an ascorbic acid process at elevated temperatures as recited in claim 19. Applicants respectfully submit that Hinkley, in fact, would have directed one of ordinary skill in the art away from the use of SO₂ or sulfites under such conditions.

In addition, as noted previously, Hinkley and Reichstein would not have taught or suggested the addition of sulfites, including SO₂, to a reaction mixture to reduce the color of the ascorbic acid product. The Office Action states that example 2 of Hinkley indicates the "beneficial effect of a sulfite species to inhibit decomposition of ascorbic acid". Applicants respectfully disagree with this conclusion. Hinkley makes no statement regarding any effect of SO₂ or sulfites on the decomposition of ascorbic acid or on ascorbic acid color. Further, as the Office Action notes, this example discloses adding SO₂ to the process during the purification step after the reaction to form ascorbic acid is complete. Example 2 is silent on the addition of SO₂ to the reaction during the conversion to ascorbic acid as recited in the present invention. The disclosures of Reichstein and Hinkley simply do not contemplate or provide any motivation, teaching, or suggestion to use a sulfite species during the preparation of ascorbic acid at elevated temperatures to reduce color.

Applicants respectfully submit that the stated rejection fails to establish a *prima facie* case of obviousness. The teachings of Hinkley, and Reichstein, either individually or in any reasonable combination, (1) would not have taught or suggested the Applicants' continuous, 5-step process for the preparation of ascorbic acid nor would have provided any suggestion to combine or modify references in a way to arrive at the presently claimed invention; (2) would not have suggested or provided motivation for the skilled person to use sulfites in a process to prepare ascorbic acid at elevated temperatures of about 120 to about 185°C; and (3) would not have provided a reasonable expectation of success because of the lack of a suggestion or teaching of the embodiments or specific limitations of Applicants' process. Applicants, therefore, respectfully request reconsideration of the application and withdrawal of the rejection.

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Applicants' believe that each of the arguments given in the Office Action have been addressed and that the references relied upon, either separately or in combination, do not support rejection of the claims under 35 U.S.C. §103(a). Accordingly, the withdrawal of the rejections and allowance of the application are earnestly solicited.

Respectfully submitted,

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Cathy L. Adkins
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8/11/04
Date